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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,640	11/20/2001	Eric Boudjema	Q66738	8908

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Washington, DC 20037-3213

EXAMINER
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QUINONES, ISMAEL C

ART UNIT	PAPER NUMBER
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2686

DATE MAILED: 04/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/988,640

**Applicant(s)**

BOUDJEMA ET AL.

**Examiner**

Ismael Quiñones

**Art Unit**

2686

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>5</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Information Disclosure Statement*

1. The information disclosure statement (IDS) submitted on November 20, 2001 has being considered by the examiner and made of record in the application file.

### *Priority*

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 1-3, 7-9 and 12-14** are rejected under 35 U.S.C. 102(e) as being anticipated by Vilander et al. (WO 99/66748).

Regarding **claim 1**, Vilander et al. disclose a method of distributing transmission resources in a telecommunication system (A method with reference to mobility management, comprising a mobile communication system that distribute different types

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of services, wherein those services consist of transmission resources such as communication channels; *Page 1, lines 17-23*) in which calls from or to terminals pass through a call connection station (Wherein a connection is established between a mobile station or communication terminal and a radio access network, said radio access network comprising connection stations such as Base Station Subsystem; *Page 2, line 27 thru Page 3, line 5; Page 8, lines 4-19*), in which method the transmission resources controlled by said station are divided into dedicated resources allocated to terminals connected to said station (Dedicated resources such as dedicated radio channels allocated for those communication terminals connected to a radio access network, whose amount of data or other connection parameters exceeds a predetermined threshold; *Page 3, lines 19-26; Page 4, lines 2-7 and lines 11-12; Page 5, lines 9-12*) and common resources that can be used by any terminal connected to said station if its dedicated resources are insufficient (Common resources such as common radio channels, whose criteria for determining their employment when a communication terminal is coupled to a connection station is based upon traffic parameters, such as volume or amount of data, furthermore switching to said common radio channel when a dedicated radio channel becomes insufficient or inadequate for handling volumes of data below a predetermined threshold; *Pages 3, lines 13-26; Page 4, lines 7-8 and lines 12-14; Page 5, lines 9-12; Page 9, lines 12-14; Page 9, lines 25 thru Page 10, line 1; Page 10, line 25 thru Page 11, line 16; Page 11, lines 21-27*).

Regarding **claim 2**, and as applied to claim 1, Vilander et al. disclose the aforementioned, wherein said transmission resources consist in at least one resource:

frequencies (Resources for providing services such as voice and packet data through radio communication channels; *Page 1, lines 7-23*).

Regarding **claim 3**, and as applied to claim 1, Vilander et al. disclose the aforementioned method, wherein said dedicated resources are determined using a statistical call model for each terminal over a given time period (Wherein statistical call models such as non-linear predictors (Kalman filter-based model, fuzzy logic, self-learning based model, etc.) are employed for selecting a type of communication resource (dedicated or shared/common radio channel), for each communication terminal in a given time period or arrival packet time; *Page 15, lines 13-20 and lines 24-25; Page 16, lines 18-23; Page 17, lines 10-22; Page 20, lines 3-15; Page 21, lines 1-19; Page 22, lines 3-16; Page 25, lines 12-15*), said statistical model predicting a theoretical call intensity coming from each terminal at a given time within that period (The statistical model predicting a theoretical call intensity, such as the amounts of packets to be sent over a radio communication channel at a given time period; *Page 20, lines 3-15; Page 21, lines 1-19; Page 22, lines 3-16; Page 25, lines 12-15*).

Regarding **claim 7**, Vilander et al. disclose a connection station for a telecommunication system in which calls from or to terminals pass through said connection station (Wherein a connection is established between a mobile station or communication terminal and a radio access network, said radio access network comprising connection stations such as Base Station Subsystem; *Page 2, line 27 thru Page 3, line 5; Page 8, lines 4-19*), which is adapted to distribute resources for transmission from said station to said terminal or from said terminal to said station

(Distributing different types of services such as radio communication channels based on one or more conditions for a particular connection state; *Page 1, lines 20-23; Page 3, lines 13-17*) between dedicated resources that are allocated to terminals connected to said station (Dedicated resources such as dedicated radio channels allocated for those communication terminals connected to a radio access network, whose amount of data or other connection parameters exceeds a predetermined threshold; *Page 3, lines 19-26; Page 4, lines 2-7 and lines 11-12; Page 5, lines 9-12*) and common resources that can be used by any terminal connected to said station if its dedicated resources are insufficient (Common resources such as common radio channels, whose criteria for determining their employment when a communication terminal is coupled to a connection station is based upon traffic parameters, such as volume or amount of data, furthermore switching to said common radio channel when a dedicated radio channel becomes insufficient or inadequate for handling volumes of data below a predetermined threshold; *Pages 3, lines 13-26; Page 4, lines 7-8 and lines 12-14; Page 5, lines 9-12; Page 9, lines 12-14; Page 9, lines 25 thru Page 10, line 1; Page 10, line 25 thru Page 11, line 16; Page 11, lines 21-27*).

Regarding **claim 8**, and as applied to claim 7, Vilander et al. disclose the aforementioned station, wherein said resources distributed include at least one: frequencies (Resources for providing services such as voice and packet data through radio communication channels; *Page 1, lines 7-23*).

Regarding **claim 9**, and as applied to claim 7, Vilander disclose the aforementioned station adapted to determine said dedicated resources using a statistical

call model for each terminal over a given time period (Wherein statistical call models such as non-linear predictors (Kalman filter-based model, fuzzy logic, self-learning based model, etc.) are employed for selecting a type of communication resource (dedicated or shared/common radio channel), for each communication terminal in a given time period or arrival packet time; *Page 15, lines 13-20 and lines 24-25; Page 16, lines 18-23; Page 17, lines 10-22; Page 20, lines 3-15; Page 21, lines 1-19; Page 22, lines 3-16; Page 25, lines 12-15*), said statistical model predicting a theoretical call intensity from each terminal at a given time within that period (The statistical model predicting a theoretical call intensity, such as the amounts of packets to be sent over a radio communication channel at a given time period; *Page 20, lines 3-15; Page 21, lines 1-19; Page 22, lines 3-16; Page 25, lines 12-15*).

Regarding **claim 12**, Vilander et al. disclose a telecommunication system adapted to distribute transmission resources (A method with reference to mobility management, comprising a mobile communication system that distribute different types of services, wherein those services consist of transmission resources such as communication channels; *Page 1, lines 17-23*), in which system calls from or to terminals pass through a connection station (Wherein a connection is established between a mobile station or communication terminal and a radio access network, said radio access network comprising connection stations such as Base Station Subsystem; *Page 2, line 27 thru Page 3, line 5; Page 8, lines 4-19*), said telecommunication system being adapted to distribute resources for transmission between said station and said terminals (Distributing different types of services such as radio communication channels based on one or more

conditions for a particular connection state; *Page 1, lines 20-23; Page 3, lines 13-17*) between dedicated resources allocated to terminals connected to said station (Dedicated resources such as dedicated radio channels allocated for those communication terminals connected to a radio access network, whose amount of data or other connection parameters exceeds a predetermined threshold; *Page 3, lines 19-26; Page 4, lines 2-7 and lines 11-12; Page 5, lines 9-12*) and common resources that can be used by any terminal connected to said station if its dedicated resources are insufficient (Common resources such as common radio channels, whose criteria for determining their employment when a communication terminal is coupled to a connection station is based upon traffic parameters, such as volume or amount of data, furthermore switching to said common radio channel when a dedicated radio channel becomes insufficient or inadequate for handling volumes of data below a predetermined threshold; *Pages 3, lines 13-26; Page 4, lines 7-8 and lines 12-14; Page 5, lines 9-12; Page 9, lines 12-14; Page 9, lines 25 thru Page 10, line 1; Page 10, line 25 thru Page 11, line 16; Page 11, lines 21-27*).

Regarding **claim 13**, and as applied to claim 12, Vilander et al. disclose the aforementioned system, wherein said resources distributed include at least one resources: frequencies (Resources for providing services such as voice and packet data through radio communication channels; *Page 1, lines 7-23*).

Regarding **claim 14**, and as applied to claim 12, Vilander et al. disclose the aforementioned system, wherein said distribution of resources entails determining said dedicated resources using a statistical call model for each terminal over a given time period (Wherein statistical call models such as non-linear predictors (Kalman filter-based



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model, fuzzy logic, self-learning based model, etc.) are employed for selecting a type of communication resource (dedicated or shared/common radio channel), for each communication terminal in a given time period or arrival packet time; *Page 15, lines 13-20 and lines 24-25; Page 16, lines 18-23; Page 17, lines 10-22; Page 20, lines 3-15; Page 21, lines 1-19; Page 22, lines 3-16; Page 25, lines 12-15*), said statistical model predicting a theoretical call intensity from each terminal at a given time within that period (The statistical model predicting a theoretical call intensity, such as the amounts of packets to be sent over a radio communication channel at a given time period; *Page 20, lines 3-15; Page 21, lines 1-19; Page 22, lines 3-16; Page 25, lines 12-15*).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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7. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over Vilander et al. (WO 99/66748) in view of Funke et al. (U.S Pat. No. RE37,571).

Regarding **claim 4**, and as applied to claim 3, Vilander et al. disclose the aforementioned method for determining dedicated resources using a statistical call model for each terminal over a given time period. Vilander et al. fail to clearly specify wherein said time period of said model for each terminal is 24 hours.

In the same field of endeavor, Funke et al. disclose a radio communication system that takes statistical measurements gathered at predefined intervals during a 24 hours time period (*col. 32, lines 64-66*).

Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to have Vilander et al. method for determining dedicated resources using a statistical call model for each terminal over a 24 hours time period as taught by Funke et al. for the purpose of collecting traffic data over a relative large time period and accurately predicting a particular behavior.

8. **Claims 5, 10, and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Vilander et al. (WO 99/66748) in view of Iizuka (U.S Pat. No. 6,246,880).

Regarding **claim 5**, and as applied to claim 3, Vilander et al. disclose the aforementioned method, wherein a theoretical call intensity is predicted from each terminal at a given time period. Vilander et al. fail to clearly specify wherein, for each terminal, at a given time, call intensity is predicted equal to its maximum call intensity weighted by its habitual rate of use (in Erlangs) at that time.

In the same field of endeavor, Iizuka discloses a method in a wireless communication system for providing wireless services in accordance to a predicted or possible traffic load/intensity from a communication terminal such as a base station at a given time period or intervals (periods of congestion), said predicted traffic load determined by recorded successful and denied requests for access, subsequently weighted by an habitual or averaged/estimated traffic load (*col. 2, lines 14- 18 and lines 43-46; col. 6, lines 7-12 and lines 47-54; col. 7, lines 4-16*).

Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to have Vilander et al. method for predicting call intensity in a given time period, weighting a maximum call intensity by its habitual rate of use as taught by Iizuka, for the purpose of developing a planning tool that accommodates users demands according to an adaptive growth when requesting wireless services.

Regarding **claim 10**, and as applied to claim 7, Vilander et al. disclose the aforementioned station adapted to allocate communication terminals. Vilander et al. fail to clearly specify wherein, for each terminal, at a given time, call intensity is predicted equal to its maximum call intensity weighted by its habitual rate of use (in Erlangs) at that time.

In the same field of endeavor, Iizuka discloses a method in a wireless communication system for providing wireless services in accordance to a predicted or possible traffic load/intensity from a communication terminal such as a base station at a given time period or intervals (periods of congestion), said predicted traffic load determined by recorded successful and denied requests for access, subsequently weighted

by an habitual or averaged/estimated traffic load (*col. 2, lines 14- 18 and lines 43-46; col. 6, lines 7-12 and lines 47-54; col. 7, lines 4-16*).

Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to have Vilander et al. connection station adapted to allocate communication terminals, to predict call intensity in a given time period, weighting a maximum call intensity by its habitual rate of use as taught by Iizuka, for the purpose of developing a planning tool that accommodates users demands according to an adaptive growth when requesting wireless services.

Regarding **claim 15**, and as applied to claim 12, Vilander et al. disclose the aforementioned system adapted to allocate communication terminals. Vilander et al. fail to clearly specify wherein, for each terminal, at a given time, call intensity is predicted equal to its maximum call intensity weighted by its habitual rate of use (in Erlangs) at that time.

In the same field of endeavor, Iizuka discloses a method in a wireless communication system for providing wireless services in accordance to a predicted or possible traffic load/intensity from a communication terminal such as a base station at a given time period or intervals (periods of congestion), said predicted traffic load determined by recorded successful and denied requests for access, subsequently weighted by an habitual or averaged/estimated traffic load (*col. 2, lines 14- 18 and lines 43-46; col. 6, lines 7-12 and lines 47-54; col. 7, lines 4-16*).

Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to have Vilander et al. telecommunication system adapted to

allocate communication terminals, to predict call intensity in a given time period, weighting a maximum call intensity by its habitual rate of use as taught by Iizuka, for the purpose of developing a planning tool that accommodates users demands according to an adaptive growth when requesting wireless services.

9. **Claims 6, 11, and 16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Vilander et al. (WO 99/66748) in view of Mitra et al. (EP 0 790 726 A2).

Regarding **claim 6**, and as applied to claim 3, Vilander et al. disclose the aforementioned method. Vilander et al. fail to clearly specify the application of the aforementioned method to admitting calls into a telecommunication system into which a call is admitted if the probability of said new call saturating said network is less than a predetermined threshold, where said probability is a function of the the number of terminals that are communicating when a new call is requested

In the same field of endeavor, Mitra et al. disclose a method wherein an adaptive statistical model (i.e. a Poisson process) is employed for the admission of new calls into a telecommunication network (Page 4, lines 15-24), in which a call is admitted if the probability of said new call overloading the network capacity is less than a predetermined threshold or nominal capacity allocated to a particular class of service (*Page 4, line 48 thru Page 5, line 13*), where said probability is a function of the the number of terminals that are communicating when a new call is requested (A reservation function ( $r_k$ ), that depends on the probability of the new call saturating the network ( $d_k$ , a bandwidth

required by a new call), and the number of calls in progress ( $n_k d_k$ ); *Page 4, line 48 thru Page 5, line 13, Page 5, line 27 thru Page 6, line 15*).

Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to have Vilander et al. method applied to admitting calls into a telecommunication system as taught by Mitra et al. for the purpose of accommodating resources and managing traffic congestion without degrading the quality of service when admitting a new call without affecting calls that are already in progress.

Regarding **claim 11**, and as applied to claim 9, Vilander et al. disclose the aforementioned station. Vilander et al. fail to clearly specify the aforementioned station adapted to admit calls into said telecommunication system if the probability of the new call saturating said network is less than a predetermined threshold and said probability is a function of the the number of terminals that are communicating when a new call is requested.

In the same field of endeavor, Mitra et al. disclose a method wherein an adaptive statistical model (i.e. a Poisson process) is employed for the admission of new calls into a telecommunication network (*Page 4, lines 15-24*), in which a call is admitted if the probability of said new call overloading the network capacity is less than a predetermined threshold or nominal capacity allocated to a particular class of service (*Page 4, line 48 thru Page 5, line 13*), where said probability is a function of the the number of terminals that are communicating when a new call is requested (A reservation function ( $r_k$ ), that depends on the probability of the new call saturating the network ( $d_k$ , a bandwidth

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required by a new call), and the number of calls in progress ( $n_k d_k$ ); *Page 4, line 48 thru Page 5, line 13, Page 5, line 27 thru Page 6, line 15*)

Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to have Vilander et al. connection station adapted applied to admit calls into a telecommunication system as taught by Mitra et al. for the purpose of accommodating resources and managing traffic congestion without degrading the quality of service when admitting a new call without affecting calls that are already in progress.

Regarding **claim 16**, and as applied to claim 14, Vilander et al. disclose the aforementioned system. Vilander et al. fail to clearly specify wherein a call is admitted if the probability of the new call saturating said network is less than a predetermined threshold and said probability is a function of the the number of terminals that are communicating when a new call is requested.

In the same field of endeavor, Mitra et al. disclose a method wherein an adaptive statistical model (i.e. a Poisson process) is employed for the admission of new calls into a telecommunication network (Page 4, lines 15-24), in which a call is admitted if the probability of said new call overloading the network capacity is less than a predetermined threshold or nominal capacity allocated to a particular class of service (*Page 4, line 48 thru Page 5, line 13*), where said probability is a function of the the number of terminals that are communicating when a new call is requested (A reservation function ( $r_k$ ), that depends on the probability of the new call saturating the network ( $d_k$ , a bandwidth required by a new call), and the number of calls in progress ( $n_k d_k$ ); *Page 4, line 48 thru Page 5, line 13, Page 5, line 27 thru Page 6, line 15*)

Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to have Vilander et al. telecommunication system adapted to admit calls into a telecommunication system as taught by Mitra et al. for the purpose of accommodating resources and managing traffic congestion without degrading the quality of service when admitting a new call without affecting calls that are already in progress.

***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Carlborg et al. (U.S. P.G.-Pub. No. 2003/0078050), Method and Apparatus for Allocating Air Interface Resources.

b. Oliva (U.S. Pat. No. 6,504,820), Method and System for Connection Admission Control.

c. Z. Fan et al. (IEEE Proc.-Commun. Vol. 144, No. 5, October 1997), Access flow control scheme for ATM networks using neural-network-based traffic prediction.

d. Perros et al. (IEEE Communications Magazine, Volume: 34, Issue: 11, Pages: 82-91; November 1996), Call Admission Control Schemes: A Review.

11. Any response to this Office Action should be **faxed to** (703) 872-9306 or **mailed to:**

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**Hand-delivered** responses should be brought to

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12. Any inquiry concerning this communication on earlier communications from the Examiner should be directed to Ismael Quiñones whose telephone number is (703) 305-8997. The Examiner can normally be reached on Monday-Friday from 8:00am to 5:00pm.

13. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Marsha D. Banks-Harold can be reached on (703) 305-4379, and fax number is (703) 746-9818. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9301.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose number is (703) 305-4700 or call customer service at (703) 306-0377.

*Ismael Quiñones*

I.Q.

April 12, 2004

*Marsha D Banks-Harold*  
MARSHA D. BANKS-HAROLD  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600